

about the tenth part of an Inch, and its height an Inch or more. For by this means, if the Axis of the Prism be Parallel to the Perpendicular of the Triangle, the Image *pt* will now be formed of Equicrural Triangles *ag*, *bh*, *ci*, *dk*, *el*, *fm*, &c. and innumerable other intermediate ones answering to the Triangular hole in shape and bigness, and lying one after another in a continual Series between two Parallel Lines *af* and *gm*. These Triangles are a little intermingled at their Bases but not at their Vertices, and therefore the Light on the brighter side *af* of the Image where the Bases of the Triangles are is a little compounded, but on the darker side *gm* is altogether uncompounded, and in all places between the sides the Composition is Proportional to the distances of the places from that obscurer side *gm*. And having a Spectrum *pt* of such a Composition, we may try Experiments either in its stronger and less simple Light near the side *af*, or in its weaker and simpler Light near the other side *lm*, as it shall seem most convenient.

But in making Experiments of this kind the Chamber ought to be made as dark as can be, least any forreign Light mingle it self with the Light of the Spectrum *pt*, and render it compound; especially if we would try Experiments in the more simple Light next the side *gm* of the Spectrum; which being fainter, will have a less Proportion to the forreign Light, and so by the mixture of that Light be more troubled and made more compound. The Lens also ought to be good, such as may serve for Optical Uses, and the Prism ought to have a large Angle, suppose of 70 degrees, and to be well wrought, being made of Glas free from Bubbles and Veins, with its sides not a little Convex or Concave as usually happens but truly Plane, and its polish elaborate, as in working Optick-glasses,

glasses, and not such as is usually wrought with Putty, whereby the edges of the Sand-holes being worn away, there are left all over the Glas a numberless company of very little Convex polite risings like Waves. The edges also of the Prism and Lens so far as they may make any irregular Refraction, must be covered with a black Paper glewed on. And all the Light of the Sun's beam let into the Chamber which is useless and unprofitable to the Experiment, ought to be intercepted with black Paper or other black Obstacles. For otherwise the useless Light being reflected every way in the Chamber, will mix with the oblong Spectrum and help to disturb it. In trying these things so much Diligence is not altogether necessary, but it will promote the success of the Experiments, and by a very scrupulous Examiner of things deserves to be applied. It's difficult to get glass Prisms fit for this purpose, and therefore I used sometimes Prismatick Vessels made with pieces of broken Looking-glasses, and filled with rain Water. And to increase the Refraction, I sometimes impregnated the Water strongly with *Saccharum Saturni*.

PROP. V. Theor. IV.

Homogeneal Light is refracted regularly without any Dilatation splitting or shattering of the Rays, and the confused Vision of Objects seen through Refracting Bodies by Heterogeneal Light arises from the different Refrangibility of several sorts of Rays.

THE first Part of this Proposition has been already sufficiently proved in the fifth Experiment, and will further appear by the Experiments which follow.

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Exper. 12.